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The Geographic Factor

H. O. LATHROP*

What is the geographic factor

HUMAN life is the product of many influences. From the cradle to the grave, various factors shape, mould, and modify man and make him what he is. Within limits, he may choose among certain of these fundamental influences; others are largely determined for him.

Three sets of factors are always actively at work in forming human personality. Since the first of these, heredity, is transmitted from his ancestors, man is powerless to alter this factor greatly. Social environment, the second set of factors, man may choose or modify to some extent. He may choose his friends, and, within limits, the society in which he moves.

The third factor is that of the natural environment. Man is born on the stage of life's activity, the earth. Although in this case he has no choice, within certain narrow limits he may make some changes in his earth environment. He may also choose, to some extent, the natural environment in which he desires to live; if he does not like the tropics or the arctic regions he may migrate to middle latitudes, or vice versa; likewise, he may choose the mountains if he does not like the plains, or the ocean instead of the land. But, by and large, man must accept the natural environment into which he is born. He may heat his shelter, but he can not change the climate where his shelter is located; he may level small areas, but the mountains and the plains remain as he found them; he may tunnel mountains and divide continents by inter-oceanic canals, but the continents and oceans remain as they were; although he may fly four hundred miles an hour, distance remains a thing he can not eliminate. Only thirty miles of English Channel separated Hitler from his goal; and England is still England. The natural resources which man must use were formed millions of years before his birth. He can change or modify them very little. In a thousand ways, he may pit his puny strength against the natural features and forces of this earth, but the continents, the oceans, the mountains, and the plains remain; seasons come and go; droughts and floods wreak their havoc; and man stands powerless.

All these and other phases of the earth's environment that impinge upon man constitute the geographic factor. It is a factor with which man must always reckon. The study of the interrelationships between man and his natural environment is geography. Geography not only describes such interrelationships, but it also attempts to explain the why of them. The understanding of the why is even more important than a description of the relationships.

* Head of Department of Geography and Geology.

Characteristics of the geographic factor

It is Omnipresent. Man's natural environment surrounds him on every hand, at all times. He cannot escape it. Its presence and influence among primitive peoples are easily recognized. Many illustrations have been taken from primitive societies to show how man is largely a product of his physical environment. In a complex, modern, industrial society the geographic factor is just as truly present, but in this case difficult to separate from the other factors that work upon man. His industries and commerce, his sports and vacations, his travels and explorations, and most of his other activiities are geographically based. It seems trite to repeat such an obvious fact were it not for the fact that so many intelligent people refuse or neglect to recognize this truth. Early in life children must be taught the desirability of living in harmony with and conformity to their natural environment, as well as the folly and futility of opposing it.

It is Silent. The golden silence of which the poet sings does not make for recognition. A blustering, bigoted Hitler gets the attention of the world, but the silent forces that really shape man's destiny over long periods go unnoticed. The late Ellen Churchill Semple puts it aptly, "Nature has been so silent in her persistent influence over man that the geographic factor in the question of human development has been overlooked." Aesop tried to teach the need for recognition of the silent but forceful influences on man in his fable showing the superiority of the quiet but effective sun over the blustering but futile wind.

Geographers are frequently asked how the geography of Europe can be taught today. The natural but silent factors of climate, soil, topography, natural resources, rivers, and oceans remain the same as ever and the people are responding to their influence in much the same way as they did before the war started. When peace comes again to that continent, man will take up where he left off and will produce the fruits and grains of the fields, hew the timber of the forests, and dig the minerals from the depths of the earth. Fortunately a Hitler cannot change these fundamental factors. Rather, his very success or failure in the end will be determined by these silent forces of the natural environment where bluster and deceit are of no avail.

It is Persistent. When man evolved as man, he worked to get a living much as he does now. He secured the material things of life, then as now, in the easiest way. He took advantage of nature's kindness and bounty to secure the maximum goods and comforts with a minimum of effort. The same nature that influenced him in the early days of the race persists in its influence upon him today. Man may neglect or even oppose his natural environment but sooner or later a kindly but persistent nature forces him to comply, if he will succeed. The unending, unyielding persistence of the geographic factor in man's life is a fact which neither law nor pedagogical phraseology can change.

It May be Eclipsed Temporarily by

Other Factors. Man's imagination is captured by the spectacular. He likes to read history that tells of his own achievements. The baubles and glitter captivate him. Hitler, Napoleon, and all their ilk are puff-balls in the great drama of man's climb upward. Back of the gilt and the glamour of daily life, behind the noise of cannon and the smoke of battle, unnoticed during the bombast of debate in legislative halls, stands the strong, silent, persistent forces of this universe, ever calling man back to his senses and making him realize that in the end his destiny is in large measure determined by the earth environment that surrounds him on every hand. The light may be temporarily shut out by the smoke from man-made b. ıbles, but it shines ever more clearly when the eclipse is past. Children must be taught to look behind and through the smoke that obscures the view and to see the factors that so fundamentally influence their lives.

It is Permissive, Not Mandatory. The geographic factor does not impose itself upon man. He is a free agent, and may within certain limits, choose what he wishes to do. If he is wise and would attain the greatest success from his endeavors, he will work with and will not oppose the factors in his natural environment. Although environmental determinism is not accepted by modern geographers, they all agree that man's choice is definitely restricted within certain limits by an unyielding earth environment. Man may choose to farm rather than mine, or to herd rather than to cut timber, but he cannot grow bananas in Greenland or reindeer in the tropics. He may not cut timber on the prairies, or mine coal where none exists. Nature permits man to try dairying in in both the Amazon Valley and in Wisconsin; he will fail in the former place, but may succeed in the latter. Man's conformity with the geographic factor is one assurance of success. The heaviness of the penalty for noncomformity is largely what man makes it.

It is Passive Rather than Active. Man likes activity. Since the geographic factor is passive, if man wishes to ignore it, he may do so temporarily but not with impunity. Unfortunately the non-recognition of this fact has caused untold suffering throughout the world. Sufficient rainfall is necessary to grow satisfactory crops. Man in his enthusiasm for conquering this continent pushed too far into the semi-arid lands and was forced to retreat. Three times he has made this advance, and three generations have suffered from the passive but nevertheless certain force of an uncompromising nature. After thousands have broken their lives against an unyielding environment a program of resettlement has been inaugurated. This program recognizes the supremacy of the natural environment and man's powerlessness against it. Man must not take passivity for weakness. The quiet power of a passive nature is not the impotence of frailty but the strength of unchanging continuance. Climate, soil, land forms, water bodies permit man to break himself against their unyielding passivity, but in the end they prevail. Man's nonrecognition of the

quiet, passive forces is sure to make his best endeavors end in failure.

Recognition of the geographic factor

Shutting one's eyes to conditions does not change the facts. Ignoring the pain does not put out the fire that causes the burn. Although other factors are important in education and must be recognized, the geographic factor must be placed as co-equal with the others. Changing the name does not alter the influences of the geographic factor. The geographic factor as part of the area of natural science or of social science is still geography. It may be fused in pedagogical verbiage with a conglomeraion of other things, but it is still there and must be recognized in all curriculum construction or revision. It is basic in man's existence.

There is so much confusion in the world today that it is difficult to get one's feet on solid rock or to see clearly what are the basic and fundamental factors of life. The earth environment is the stage where man works and plays. Geography attempts to point out how the drama and its effiectiveness are shaped by the stage and its setting.

Relation of the geographic factor to other fields of knowledge

The geographic factor not only affects man directly but also gives the setting for other fields of human knowledge and study. It must be recognized in that capacity also. Geography is the fundamental basis of the other social studies and contributes greatly to an understanding of literature. Both history and literature must have a setting; that setting is somewhere on the earth, and thus always reflects the geographic conditions. Much of man's work and many of his activities are little understood and poorly appreciated because the basic causes that underlie and influence both are ignored.

The specialist in any of the social sciences is helpless without due recognition of the interactions of the natural environment with man. Man's activities are so rooted in that environment that specialized social studies reach no goal without recognition of this relationship. The mores of primitive societies are inseparably connected with the natural environment in which that society has evolved. The jungle, the desert, the mountains, the sea, the prairie, each puts its stamp upon the society that develops there. Economics has been defined as the science of wealth, or the science that deals with satisfying the material wants of man. Material wealth is based upon earth resources and natural environmental factors. History is the record of the successive dramas in man's evolution. In these dramas, which were staged on the earth, the successive scenes were largely determined by the stage setting.

The geographic factor, moreover, links together the social and natural sciences. Geographic botany has long been recognized as an essential and productive study in botany. Soils are the product of earth processes and their effect upon human life is determined by such environmental factors as climate and relief. The geographic factor grows out of the last phase of earth history as recorded by the geologist. Meteorology is inseparably linked

with man through the consideration of atmosphere influences upon man's life and work.

The geographic factor with all its implications is inherent in man's life. If one is wise, he will recognize this fact. Moreover, he will recognize it as one of the essential factors in education. Geography not only makes its own contribution, but is basic in understanding the other social sciences and is an important link connecting the social and natural sciences. Literature is more fully appreciated when understood in its natural setting. A factor of such importance must be recognized in any sound educational program.

High School Geography in Illinois

MABEL P. CROMPTON*

HIGH school principals have the responsibility of building such curricula as will give young people experiences which will train them to cope effectively with everyday problems of living and which will train them to assume citizenship duties in national affairs and to be interested in shaping foreign policies. Geography has a distinctive contribution to make, a contribution which is essential to an understanding and a solution of many world-problems.

Citizens of this generation realize how rapidly people have changed from citizens of a community to citizens of a state, from citizens of a state to citizens of a nation. Not many years ago human beings were interested only in their own local environment. Rapid communication and transportation have so lessened distances that individuals formerly concerned with one locality have become very conscious of national interests. However, the understanding of the natural environment factors of the nation and their importance to human activities and human responsibilities has not been sufficiently enlarged and has not kept pace with this stretching of the community to include the whole nation.

The development of rapid world communication and transportation has led to higher standards of living. These standards create more and more desires for resources from the far corners of the world. Since many political problems concerning the securing of these resources have arisen, the young people of today, instead of having the conception that they are merely citizens of a nation, are firmly convinced that they are world citizens. Geography is necessary in the satisfactory development of these world citizens, especially young people who are citizens in a democracy where their right of suffrage forces them to share in the responsibilities of government and international relationships.

Secondary school educators must accept the responsibility of making it possible for their young people to de-

* Assistant Professor of Geography.

velop a firm foundation for understanding the world since so large a percentage of these students will have no further formal training. An understanding of the world is impossible without awareness of the historic and economic background of the present. Likewise such an understanding is impossible without a background of knowledge of the natural environmental factors which form the stage upon which this world drama is taking place. Young people in the secondary schools must comprehend the infinitely varied correlation between the human actors and this world stage. They must have the ability to follow understandingly a geographical analysis of political problems involving the commercial utilization of earth resources. Such an understanding cannot take place in the immature minds at the elementary school level. The development of this part of secondary school training belongs to geography and to geography alone.

Are the high school principals in Illinois taking the responsibility of giving their students this essential training? Recently a compilation of reports from freshmen at Illinois State Normal University has been made. This report shows that only one-third of these people came from high schools where geography was offered! The high school principals ascribe this appalling condition to an already overcrowded curriculum. The responsibility is still his for he is permitting many non-essentials to crowd out the essentials. The high school graduates themselves offer many suggestions as to desirable omissions from the high school curriculum. Many high schools still emphasize the type of training that was followed in the middle of the nineteenth century. A little checking with thoughtful high school graduates would be most revealing to principals and would prove helpful in the choice of required courses for present day needs. Many college students ask why they were not given a chance to study geography in the high school. When the excuse of a crowded high school curriculum is offered, they invariably come back with a list of things which they would omit in order to make room for geography, a subject which they feel should be included in the preparation of the individual to meet world problems successfully.

In a number of high schools where geography is offered, it is assigned to some one who does not have a full teaching load, regardless of this individual's training. Records show that many times geography is assigned to the athletic coach. Can one imagine the high school principal allowing his football team to be coached by a geographer who is untrained in coaching! It is just as absurd to permit this training in geography to be handled by the coach, the commerce teacher, the mathematics teacher, the industrial arts teacher, the biology teacher, the home economics teacher, the music teacher, the Latin teacher, or the art teacher. Records show that such a condition actually exists in Illinois high schools, in spite of the fact that all of the Teachers Colleges of the state are graduating a sufficient number of well-

trained teachers for high school geography. Dr. Alden Cutshall of the Geography Department of the University of Illinois reports the same conditions in a recent study he has made of high school geography in Illinois.

Fortunately there are a few rosy spots in this gloomy picture. There are some high schools that are offering their young people the opportuity of developing an understanding of the great world stage and the responses of the human actors to it through carefully organized geography courses that are taught by teachers who have had college training in the subject. The following lists indicate the units of study used in some of the high school courses of the state:

Miss Margaret Means of Bloomington High School offers the following work for one semester for seniors:

POLITICAL GEOGRAPHY

Unit I. A survey of the evolution of the world's political pattern and of territorial changes which have taken place since 1900

Unit II. An analysis of the principal physical, economic, and human elements which must be considered in connection with the study of any political unit

Unit III. Detailed studies of countries in Ibero-America, Europe, and the Far East

Alfred Kasel from Moline reports the following course:

COMMERCIAL GEOGRAPHY

Unit I. Our place in the universe and in the commercial world.

Unit II. An inventory of the resources of the United States

Unit III. Trade and industries of Western United States

Unit IV. Agriculture of the Middle West

Unit V. The industries and trade of the South

Unit VI. The industries and trade of the American manufacturing belt

Unit VII. Our ocean trade and transportation

Unit VIII. Industries and trade of tropical America

Unit IX. The industries and trade of Western Europe

Unit X. Our commercial relations with the Orient

In the study of each unit an attempt is made to show how the activities of the industry are related to the natural environment.

Miss Emaline Miller of Woodruff Senior High School, Peoria, presents the following plan:

COMMERCIAL GEOGRAPHY

The first semester takes up the study of the United States and its possessions. The following units are included:

I. Nature's gift to our country
II. Our dependence upon the soil
III. Harvests of the sea
IV. Our use of the forest
V. The work of mill and factory
VI. The exchange of goods
VII. Our territories and dependents

The second semester includes the study of the rest of the world. The following units are included:

I. Our nearest neighbors
II. Other western world neighbors
III. Europe

IV. Mediterranean Europe
V. Old countries made new
VI. Countries of southwestern Asia
VII. India
VIII. The Far East
IX. Australia and New Zealand
X. Africa

The following facts are constantly emphasized, helping to make students world-minded and tolerant of other people and their problems:

1. Study of their own natural and social landscapes and of those in which others live.

2. Conservation or applied geography. The distribution of natural resources, many of which are irreplaceable, shows the need for cooperation among the countries of the world.

3. The effect of economic nationalism, which is a hindrance to economic progress.

4. The production, movement, and use of major commercial products.

5. The world's commercial pattern with an understanding of how it is related to the occupational pattern and the basic pattern of natural resources and conditions.

A similar plan is followed by Miss Louise Trager at Lake View High School, Chicago; by Miss Emilie Huck, Centralia Township High School; by George C. DeLong, Jacksonville; by Miss Clare Symonds, Quincy Senior Hlgh Schooi; by Miss Margaret Means, Bloomington; and by Miss Edna Brown, Central High School, Peoria.

Miss Ernestine Wene of Towanda Community High School and Miss Neva McDavit of University High School use the following units:

GENERAL GEOGRAPHY

I. The foundation of economic geography
II. The earth—the stage on which man lives and works
III. Natural elements of the earth
IV. Man
V. Climatic influences and climatic regions
VI. The intermediate climates
VII. Subtropical climates
VIII. Polar and subpolar climates
IX. Equatorial and tropical regions
X. The United States as a permanent country
    1. Problems of increasing difficulty: government and resources in the United States
    2. Great possibilities demanding intelligence: the trade and future of the United States
    3. Methods of using the resources of our country
XI. The northlands and the southlands (of North America)

Ben H. Wilson uses the following plan in Joliet Township High School:

GEOGRAPHY OF THE UNITED STATES

Unit I. A study of environmental geography designed to build up the pupil's interest in the subject. The course begins with purely local studies with which he is already familiar, and then reaches out, tying in with the more distant parts, including the United States as a whole.

Unit II. A study of the United States as a whole, stressing at all times, the relationship to and dependency of the local community and the State of

Illinois upon the rest of the nation.

Unit III. Regional studies intended to round out the student's knowledge of certain basic industrial, commercial, agricultural and mineral products, particularly as related to causes and effects.

GEOGRAPHY OF THE WESTERN HEMISPHERE AND POSSESSIONS OF THE UNITED STATES

Unit I. Designed as a study of our neighbors on the North and in the Pacific, to be given in view of the present World situation.

Unit II. Placing stress on the importance of the Panama Canal, means of defending it, and acquaintance with our neighbors to the South.

Unit III. Concentrating on the study of South America as the possible outlet for surplus of manufactured goods or as an additional field for export trade.

George C. DeLong presents the following units in a course at Jacksonville High School:

PHYSIOGRAPHY

Unit I. Composition of the earth

Unit II. Weathering and erosion

Unit III. Water-ground, running, floods and flood control, lakes

Unit IV. Glaciers-how they change the earth's surface

Unit V. Plains, plateaus, and mountains

Unit VI. Diastrophism (including earthquakes and volcanoes)

Unit VII. A glimpse at historical geology

Unit VIII. Possible origins and formations of our planet; the earth in space; the solar system

Unit IX. The Ocean-shore lines, movements, currents

A similar course is offered also by Miss Helen S. Turner, Oak Park and River Forest Township High School; by Harry Adams, Bloomington; by Miss Neva McDavitt at University High School, Normal; and by Weldon Watterson at Harrisburg.

Miss Helen S. Turner of Oak Park and River Forest Township High School offers the following course:

AVIATION GEOGRAPHY

First semester:

Mathematical Geography

1. Shape, size, and movement of the earth
2. Latitude, longitude, and time
3. Map projections
4. Relief
5. Air Maps
6. Magnetism
7. Dead reckoning

METEOROLOGY

Miss Neva McDavitt is offering the following elective course for Junior and Seniors in University High School, Normal:

GEOGRAPHY OF NORTH AMERICA

A rather intensive study of North America and its place in world geography, with emphasis on resources, their use and conservation.

The units are based on human-use regions

I. A broad overview of the problem

II. Human-use regions of Eastern United States

III. Geographic regions of the Great Central Plains

IV. Geographic regions of the Dry West and the Great Plains

V. Geographic regions of the Far West

VI. Geographic regions of Canada

VII. Geographic regions of our Southern neighbors in North America

Since the future world citizens now in training in our secondary schools must have the ability to analyze and understand the interrelationships between natural environmental factors and human problems and, since the development of this ability belongs to geography and to geography alone, the secondary school curriculum must be so revised that geography can be given a place. It can be done.

The Opaque Picture as a Visual Aid in Geography

EDNA M. GUEFFROY*

IN any attempt to make geography interesting and appealing to children, it is highly essential that the teacher have access to and use of a variety of geographical materials. Undoubtedly, pictures constitute an invaluable aid in assisting the imagination to form concepts of those things which cannot be studied at first hand, and in providing material which will make the classroom a bond between children and life. Pictures not only economize in time and effort, but, if properly used, also stimulate thinking by providing a basis for thought and growth. Such a stimulus means either a deepening of a former impression or the acquisition of new ideas. To the end that pictures stimulate interest and arouse curiosity that impels reading and research, they justify their use.

Although most of the modern geography texts abound in excellent and beautiful pictures of real geographic worth, pictures from other sources are desirable to supplement those of the best texts. Furthermore, many teachers find themselves teaching in school systems where books are adopted only infrequently, or, perhaps they are attemping to teach geography without the aid of a text. It is with these situations in mind that the writer, a collector of more than two thousand pictures on things geographical, offers some suggestions which may help teachers make more effective use of such visual material as opaque pictures.

Standards of evaluating pictures

So great is the wealth of picture material on every hand, that the teacher may be at a loss to know how and what to select. Just as the printed content of the lesson has been selected and arranged with reference to the purpose of the assignment,so, too, the picture should be chosen for its relation to certain geographical ideas.

The following questions, suggested

* Assistant Professor of Geography.

in the *Thirty-Second Yearbook of the National Society for the Study of Education,* serve as an excellent guide to the selection of pictures for use in geography:

1. Does the picture show a definite human activity in a natural setting? Is there any relationship between environment and things shown in the picture?

2. Does it answer some particular purpose, or have any bearing on the subject?

3. Is it within the level of appeal and comprehension of the pupils?

4. Does it include some familiar object by which the boy or girl can make comparisons of size and distance?

5. Does the picture present a true geographic situation, or is it a copy of a drawing, a sketch, or a painting? Does it portray the preesnt situation, or is it out of date?

6. Does it meet the technical qualities of proper color, practical size, and freedom from flaws? Do the significant objects stand out in sharp focus?

7. Does the picture possess characteristics which stimulate the pupils to raise questions and problems?

Source of material

An ambitious teacher with enthusiasm for and an interest in geography will find time to build up a collection of pictures that will be a source of interest and pride, not only to herself, but to the school as a whole. Where the teacher is left to her own devices for the acquisition of such material, several avenues are open to her.

Teachers desirous of pointing their efforts toward bringing geography classroom activities into relation with a conservation program should write to the Division of Information, Soil Conservation Service, Lincoln, Nebraska, or to the United States Department of Agriculture, Washington, D. C., for help in securing illustrative material. Likewise the Department of Interior, National Park Service, sends out beautifully illustrated booklets. Generally the representative of the teacher's locality in Washington will cooperate and see that the teacher gets much valuable material rich in picture possibilities at no cost.

The carefully planned snapshot or photograph of the landscape from the air or ground level is an instructional tool that may bring to the class useful and original materials. Being photographic, it may be considered authentic, and is so regarded by the children. The picture postcard, also is a good source of visual material, particularly if it is a black and white print.

The popularity and educative value of pictures is attested by their almost universal use in advertising. A well-worded letter sent on school stationery to steamship lines, railroads, tourist bureaus, commercial houses, or Chambers of Commerce will result in volumes of illustrative material. In such letters it is advisable to state what use one plans to make of it; otherwise, one may be embarrassed by visiting representatives who, rightly or wrongly, assume that the correspondent is interested in taking out stock in their company, or that he is planning a vacation trip.

One of the best sources of pictures is the children. When interested and encouraged, they will delight in bringing in many and varied additions to the collection. Incidentally, it is wise to accept all donations of pictures. Later some of these donations can be "misplaced" if they are of little value. No pupil should be discouraged by derogation of the value of his contribution.

Probably all teachers are familiar with the leading sources of pictures for geography work, *The Geographic School Bulletins* and *The National Geographic Magazine*. The latter also publishes sets of excellent pictures on such topics as "China and the Philippines," "The Eskimo," "The African Negro," and "The American Indian."

Life magazine is another source of high class pictures. The A. J. Nystrom Map and Globe Company of Chicago publishes the Fairgrieve Geography Pictures in sets of sixty-four pictures for seventy-five cents, postage extra. A postcard brings free an alphabetical list of the 512 Fairgrieve pictures showing human activities in various parts of the world. Another source of supply is found in textbooks discarded in favor of newer or better books. The pictorial supplements of leading newspapers frequently yield pictures of geographic quality. By a little questioning, friends and patrons of the school may be found who have at home interesting and worthwhile pictures which they would be only too glad to lend or give the teacher for use in the class.

Preservation and filing

Pictures are best preserved on durable cardboard, preferably grey in color. But if the filing space is limited, art construction paper is satisfactory. Any one of several brands of stainless and non-inflammable rubber cement for paper may be used for fixing the picture neatly to its mounting. After being mounted, the collection should be made useful by some method of classification—countries, products, topics, state groups — and placed in large envelopes, clearly labeled.

The great majority of teachers will find little, if any, facilities for proper housing of their pictures. The writer has found from experience that frequently the best way to get storage facilities is first to get the collection well under way and so demonstrate the necessity of such equipment. Generally, when the collection has reached such proportions as to warrant help, cabinets, filing boxes or cases will be forthcoming. At all times the material should be easily accessible to the children and, finally, the pictures should be used.

Miscellaneous suggestions for using pictures

Every effort that is possible should be made to clothe the bare facts of the text with the life and interest which the study of geography ought to inspire. In listing the following suggestions for using pictures, the writer wishes to emphasize the fact that the methods so briefly described are merely suggestive of what may be done, and that all of the methods are capable of a number of variations. The alert teacher will make use of such features of these suggestions as are best suited

to her needs. No teacher will use the same device over and over again merely because it proved attractive to the children upon several occasions. Just as a good merchant realizes the necessity of frequently changing his display windows, so will the good teacher find it necessary to change the method of presenting her visual material from time to time.

In motivating, summarizing, testing and application exercises, the teacher may find ways of using pictures. A variety of devices have been reported by teachers and gleaned from experience, devices which seem worthy of passing on.

1. Let children select numbered pictures placed on the chalk ledge and write questions about them, to be asked of other members of the class.

2. Put pictures without descriptive titles on chalk ledge. Ask children to write captions for them. Refer to pictures by number.

3. Place unlabeled pictures on chalk ledge and number. Teacher reads captions which are written by the children. Pupils pass around the room and place number of the picture fitting that title opposite the caption.

4. The teacher may give out a series of statements referring to numbered pictures along the chalk ledge. The pupils will fill in the blanks.

5. As a test on Japan for example, give each child a numbered picture and a piece of paper. He is to indicate by number "yes" or "no" if it is a picture on Japan and give the reason for his answer.

6. From a series of pictures on a country or a region, have the children rearrange the pictures in order of a journey, starting from a certain place and travelling in any direction decided upon.

7. Prepare crude moving pictures by pasting cut-out pictures on long strips of heavy paper rolled like a scroll. As the arrangement is unrolled, each picture presents a new scene in the development of the topic.

8. Pictures without captions may be presented to the class for identification.

9. Pictures may be mounted on bristolboard or heavy cardboard and used as posters.

10. The teacher may present a new region or country by assigning pictures in the text or by placing in the hands of the pupils pictures pertaining to that area. She may organze the class into an imaginary exploring party. After five minutes study, each pupil will write a story of his adventure.

11. A pictorial map of a country or a region may be made with pictures showing the special products, relief features, vegetation, or methods of earning a living.

12. Numbered pictures without captions may be called puzzle pictures. The following questions presented by the teacher give some idea of the type of puzzle questions that might be worked out: (1) What kinds of work do you at once think of in connection with pictures of the treeless grassy plain or the tropical forested land? (2) What relationships among population, work, and natural environment does the picture suggest? (3) In what region or regions do you think the

picture might have been taken?

13. A picture relating to an assigned topic may be explained in the light of material read in the text or elsewhere. When each pupil finishes his explanation, he answers to the best of his ability any questions that may come from his classmates.

14. Pictures may be used for "observation races," each side trying to see more things in the picture than the opposing side. Or, from a series of pictures, they might run races to see who can find the greatest number of kinds of work the people of a certain region do. They might see who can find the longest list of plants that help people get a living, or evidences that this is a land of little rain or much rain.

15. A large class may be divided into groups, each group selecting one picture from the set relating to a given area. Using this picture as their inspiration, the pupils may consult all available references for material which will explain the things suggested by it. At a later class meeting, the information thus obtained may be pooled, culled, and arranged into the best form possible for incorporation into the larger unit to which it belongs.

There is no thought in this discussion of minimizing the importance of moving pictures, lantern slides, or stereographs. There are some things in geography which can be taught better by these methods than by the opaque picture method. The effort here is to capitalize only on one type of basic geographical equipment, which costs little beyond an intelligent effort and a persistent interest, for entrance into a world of travel, romance, adventure, and human-natural relationships.

Autumn in Your Locality

NEVA MCDAVITT*

GEOGRAPHIC concepts acquired by observation, comparison, and interpretation are the most pleasurable and the most valuable of all geographic knowledge. An educator has said, The best way to learn and enjoy geography is to ride over it." Most people will agree that there is much profit and pleasure gained from travel, but the fact still remains that a large majority of people must spend most of their time staying at home, and thus miss this opportunity of acquiring knowledge.

It then behooves those who are trying to help educate youth, to devise some ways and means by which compensation can be made in part at least for this inability to get the benefits of extensive travel. One of the best services the teacher can render is to encourage his pupils to use their eyes, and to interpret the geography of their own locality.

This year a member of the National Council of Geography Teachers from Alabama conceived the idea that it would be very desirable for high school and junior high school pupils throughout the United States to make compar-

* Assistant Professor of Geography.

able observations of the coming of the autumn season. They were then to compile the results and thus to add the accurate knowledge of weather and climate in this country.

A representative group of each state worked out the criteria. High schools widely separated geographically in the various states were asked to participate in the experiment. A letter from the President of the National Council, Miss Alice Foster of the University of Chicago, accompanied the check sheet. The letter to Illinois teachers stated in part: Geography classes in other parts of the United States sometimes study about Illinois. Sometimes, also, their books do not tell them all they would like to know about your state. Will you help these classes by noticing just when certain things happen in your neighborhood? You are asked to notice the trees, the fields, and the work which the farmers are doing. Also keep watch of the gardens and the birds in your locality. When you have finished filling in the record on the enclosed sheet, I am asking that you send the sheet to me. I hope you will be willing to do this and that you will have a good time watching the changes which autumn bring.

The fact that this is a National Project has added incentive to the task of helping keep the observations. In the University High School class it has been a joy to watch the interest and the amount of really intelligent observation the pupils have done. The parents have cooperated to the extent that they have made special trips into the country for the children to observe the work of the farmers and the status of the harvest.

The class faithfully scanned the "Rural" page of the local paper for reports on progress of the farmers during harvest season. Almost every day some pupil had a new observation to report. On Monday morning, when the official record was made for the previous week, all the pupils were alert and each had something to contribute. A student secretary was elected. He prepared the report, another member of the class typed it, and it was sent to Miss Foster. By unanimous vote of the class, the record is to be continued until the official beginning of winter.

The results that were obtained from all the states will be compiled and a report upon the project will be given at the National Council Meeting to be held during the Christmas holidays. This report will be of much interest to the boys and girls who have had a part in furnishing the material.

This simple project—whether it proves to be a contribution to the "geography of autumn" or not—has been of much value in helping to direct pupils in purposeful observation. The habit of keeping their eyes open will carry over into watching the store windows and the papers for information on the commercial products of the country as they study economic geography.

The hope is that the habit of geographic observation will be continued throughout the lives of at least some of the pupils. If so, the project will have contributed a share in making the rounded life.

Geography Field Trips

LESLIE A. HOLMES*

PRE-HISTORIC man arose just after dawn every morning to start on a field trip—a trip with definite objectives. Their objectives were much more complex than ours are now since the first of these people may have lived as many as a million years ago. A cave man's problem was to obtain the food and clothing needed and to get back to his cave safely. His daily trip was hazardous since he was not always the hunter; in more than one instance, he became the hunted. After he had successfully completed his foraging trip, he sat around the campfire in the evening and, while eating or preparing for the next day's trip, exchanged his experiences for those of his neighbors. If one would summarize the cave man's life one would probably find that while the cave man made his living he became educated, not only by profiting from his own experiences but by gaining usable information from his neighbors. Thus man's first field trip began.

Thousands of years later the practical experiences of the cave man gave way to the philosophical thinking of many ancient and medieval scholars. These scribes sat within the comforts of their homes and thought about the earth, thus developing theories that seemed correct and that in many cases, have proved to be so, even though they were not tested until innumerable years later. It was during this time that popular thought turned to the idea that the thing to do was to think about a subject, then write about it, and thereafter call it a closed one. Apparently whatever was written was to be accepted without any question as to its truth, although the true answer may have been just outside the door. This idea is still prevalent in many instances. How much more authoritative is the written page than nature herself!

Before the present world war, the schools of western Europe were putting much more emphasis on field trips than the schools in the United States were. For example, in 1937, the British School Journeys Association sponsored trips for thousands of boys and girls in school groups that visited the British Empire and Continental Europe. As early as 1929, a wandering day once a month was required by law in Germany. On this day, classes would walk or ride to some place of interest and spend the day in study and recreation. Frequently several wandering days were taken at one time since students could thus afford longer and more extensive trips at a reduced cost on some public conveyance. The only change under the Hitler regime was to emphasis the greatness of Germany. In other words, few trips were taken out side of Germany, but innumerable ones were conducted within Germany proper.

* Associate Professor of Geography and Geology.

The popularity of field trips in the United States has increased by leaps and bounds within the last decade. Many of these trips are listed as pleasure trips, such as the numerous high school class trips, the youth hostel trips, as well as the conducted railroad, bus, and boat tours. There is no question but that a great deal of educational value is derived from trips of this kind, although much may be missed by lack of preparation and of adequate guidance. The United States covers such a large territory that the walking and bicycling trips so popular in Germany before the war are impracticable in many parts of this country. There is, however, an endless number of valuable short school trips that may be taken in every community. When a longer time is available, more distant places may be reached and studied.

Field trips in geography are essential. It is true that the teacher brings as much of the out of doors into the classroom as is possible, but no matter how much material he has, students cannot obtain the correct relationships without going into the field. Fortunately, geography always has nature's laboratory just outside the window. Students may study lakes, industries, mountains, cities, waterfalls, forests, moraines, and numerous other phenomena but they cannot bring these features into the building and hence must go to them. Living geography is not found between the covers of a text book.

The general purposes of geography and geology field trips at Illinois State Normal University are to show the students that geography consists not only of pages of printed matter but actually of real things and real people, and to show them how to use the community resources to the best advantage, both to themselves and their future students.

To list all the benefits to be derived from field trips would be impossible. Each well planned trip has different values and varies in its proportion of value. The most important benefits obtained from Normal's geography field trips are as follows:

1. A field trip increases the knowledge of the individual student because, more than by any other method, it gives him a chance to ask questions for his own information. In many cases the trip increases the quality of knowledge. For example, on one of the eastern field trips many of the students learned just how salty the ocean was after they had tasted the water. Even more important than the increase of his quality of knowledge is the increase of quantity, which is unmeasurable, but which may be well indicated by the number of earnest questions asked. The student not only gains information but remembers it longer by actually seeing and experiencing the phenomena. Certainly the novelty of several field trips a semester aids in the learning process because of the change offered in class routine. This is the "painless" method of learning.

2. An increase in learning is closely associated with an increase in the ability to observe and interpret. It is human nature to look at an object without actually seeing it. Most people have driven through some town without

realizing that they had gone through. It is also human nature to accept an object as it is without trying to find its origin. We know that a region is fertile but we make no effort to find out why it is better than an adjacent area. One without field trip experience may drive for hours on a road beside a mountain stream without a single thought as to why the mountain is there, what type it is, why there is a stream, or for what it is used. To come nearer home, most people in this community accept this region as the corn belt. How few ask why! Field trips endeavor to change just looking into looking and seeing.

3. Class room work can be tied with that in the out of doors at the opportune time. This tends to emphasize the subject under discussion as well as point out its material value. A walk around the campus with a topographic map emphasizes map study. A visit to the corn fields of the University farm helps point out that this is the corn belt better than a dozen book pages can.

4. A background of common experience is another important value to be obtained. The little incidents that happen to various members of the group are talked over and enjoyed by the whole group for many days following. In this manner, friendships develop within the student body and between students and the instructor. This relationship helps eliminate the formality of a class room. The friendship and better undertsanding that develop between the student and teacher naturally lead to a better opportunity for personnel work under conditions that are as nearly ideal as possible. In many cases the experience of a field trip may be of value both to the student and to the instructor.

5. The experience gained by the future teacher while participating in a trip is very valuable to him from the point of view of class preparation necessary before taking his class out of doors. He learns how to conduct a trip to bring out all of the objectives, and after the trip is over how to "follow up" upon returning to the class room, so that the trip objectives will be tied into a workable unit. One of the important reasons why teachers do not take classes on field trips is the lack of knowledge as to how to conduct such trips.

Excluding the numerous ten or twenty minute trips taken for one specific objective, the field trips offered by the geography and geology department of Illinois State Normal University may be separated into five groups:

1. One hour trips. These trips are offered during the regular class period and are confined to the campus or the adjacent area. During the hour, topographic maps of the campus are studied, as well as clouds, building stones, topography and minor phases of glacial moraine deposits.

2. Two hour trips. The lecture period followed by a laboratory class makes possible a two-hour trip without interruption of the student's schedule. These trips include, in addition to the material discussed on the hour trips, the area northwest of the campus as far west as the creek flowing through the

University farm, where one is able to study stream action, the ground water table, soil erosion, and soil utilization. Traffic movements on United States Highways 51 and 66 are also studied.

Field trips of about two hours duration are taken on the campus at night. On these trips the stars, planets, and moon are studied in conjunction with the class room work during the day.

The Conservation class takes a trip to the county north of the University farm to study soil conservation in all of its phases. Soil erosion control has been practiced for years in this area, where students gain an excellent idea of conservation problems as they extend over a period of years. Trips are also taken to the LeRoy soil conservation demonstration area.

Some of the classes take a trip to Lake Bloomington, where lake wave and stream action are studied. The dam and spillway offer an opportunity to discuss the problem of building similar structures in Illinois. The pump house near by can be visited to study the processing of drinking water. A valley has been cut below the spillway exposing for examination glacial and interglacial deposits. In the formations, interesting rocks and minerals are found.

3. Half-day trips. Two half-day trips are offered by the geography and geology department. One of these is for the students of Meteorology and Climate, who drive to the government weather observatory in Peoria to study weather phenomena as they are recorded there. The trip also offers opportunity to discuss weather conditions on the way to and from the weather station.

The other half-day trip is taken by the physical geography students who go into the region of East Peoria and Pekin. On this trip, glacial phenomena, stream erosion, ground water, artesian wells, springs, clouds, minerals, and rocks are studied in detail. A collection of rocks and minerals is made by each student.

4. One-day trips. The study of historical geology is not complete without a field trip into the Starved Rock area. This trip is ideal since it gives the student a chance to study the major rock layers underlying Illinois, and their relationship to each other. The importance of stream erosion in the formation of Starved Rock is also studied, as are streams, water falls, salt and sulphur wells, springs, coal mines, a limestone mine, and sand and clay pits. This is also an opportune time to observe man's work in the location of cities, parks, dams, locks, roads, and farms.

5. The Summer Field Course. Climaxing all of the other trips in size, scope, and value is the summer field course, which has been offered every year since 1926. The eastern trip gives the student an opportunity to study eastern North America from a first hand point of view. This trip usually takes six and a half weeks and covers about 6500 miles. The western trip offers the same opportunity but lasts seven weeks and covers about 8500 miles. Obviously trips of this sort require detailed preparation. Work in preparing for them is started about

Thanksgiving time and continues steadily until the day of departure. Since these trips are camping trips, a responsible transportation company is engaged to furnish busses, camping equipment, and food. The kitchen, for example, is a large truck equipped with gas stoves, ice boxes, and an electric manufacturing unit. Thus each water proof and bug proof tent is electrically lighted. As the students' energies are devoted to study, they do no camp work except to look after their personal belongings.

Formal class work on the campus before the field trip starts consists of a detailed study of the area to be covered, from a point of veiw of geography, geology, biology, history, and literature. A field note book is provided for each student One of his duties is to complete this note book while he is still on the trip.

While the student is in the field, the work naturally varies according to the area in which one happens to be traveling. A student's day starts at six-thirty in the morning. By seven forty-five the group is ready for the day's study. Frequently there is a short class session before starting. During the morning, stops are made along the route to examine and discuss problems presented by the country through which the group passes. Between stops the instructor in each bus devotes much of his time to pointing out features along the route. At noon, a lunch stop of approximately an hour is made. The work of the afternoon follows the plan of the morning, but, of course, varies greatly depending upon the area traversed. Camp is usually reached about five oclock, dinner call is at six, and at seven class call is sounded. Class meetings last on an average of from one to one and a half hours. Frequently talks are given by authorities residing in the vicinity. After class, the students devote at least an hour to their notebooks, maps, and reports. On the evenings when class sessions are not held, they usually bring their notebooks up to date or work on their reports. "Lights out" call is at ten o'clock each evening.

After returning to the campus, the students meet in class every day until the end of the summer sesison. During these meetings, a final survey of the course is completed and each student makes an oral report of some phase of the work in which he is particularly interested. Each is required to complete his maps and notebook, and take a final examination.

Nine semester hours of credit are obtained for this field trip. These credits are considered electives in geography or may be counted as six in geography and three in history. If a student elects nine semester hours of credit in geography, he attends all of the geography class meetings. If he elects six hours of credit in geography and three in history, he spends two-thirds of his formal class time in the geography class and one-third in the history class.

Inexpensive Geography Materials

NEVA MCDAVITT*

EVERY geography teacher knows that, ideally, all class work in his subject would be based upon an actual study of landscapes, a study commonly called field work. Since it is impossible to teache all geography by real experiences, it is necessary that the vicarious experiences be made as vivid as possible. Many devices are used to bring the field to the student. Written material, maps, pictures, graphs, and statistics, all play a part in helping the pupils to form concrete images of the real objects in their natural settings.

A desirable text book contains authentic materials and usually suitable pictures. But its scope is necessarily so broad that detailed information needed to answer very specific questions that may arise about an industry or a region is not to be found there.

Manufacturing companies, travel bureaus, and trade associations publish (for advertising purposes) many illustrations and much data on one specific industry or one section of the country. Such material is very useful to the geography teacher. Most of this material is available just for the asking, or at a very small cost. It is never possible for a listing of such material to be absolutely up-to-date and accurate, for, as supplies are exhausted, the materials are discontinued or are replaced by other titles.

This list is a compilation of such materials as are of value in the teaching of geography. With a very few exceptions, the materials listed have been inspected and used by the person compiling the list. Most of them, in fact, are a part of the equipment of the geography department of Illinois State Normal University, or are in the personal files of the instructors.

I. Posters and exhibits

A. Food

1. Beverages

(a) Cacao

1 *Hershey Cocoa and Chocolate*—Hershey Chocolate Co., Hershey, Pa. One must have the signature of the Principal to obtain it free.

An excellent chart four by five feet, showing cacao tree with pods, and pictures of processing, plus the finished product, as well as the food values of cacao.

2 *Chocolate and Cocoa exhibit*—Same company as in Number 1. Bottled specimens showing beans, kernels, and shells after roasting, chocolate liquor, cocoa butter and cacoa powder.

(b) Coffee

1 *Coffee — Around the World*—Bureau of Coffee Information, 230 Park Avenue, New York.

A chart-map of the world, showing producing regions and pictures from seed to vacuum pack. Clear-legible-useful.

2 *Coffee through the Camera Lens*—American Can Company, 230 Park Ave., New York.

* Assistant Professor of Geography.

Twelve 9" by 12" very good pictures, showing (in color) twigs of a coffee tree and berries, as well as in black and white, the steps in coffee production. Small-size folders may be obtained for class.

3 *Coffee—school exhibit* (free)—Brazilian American Promotion Committee, 11 Water Street, New York.

(c) *Evaporated Milk* — Evaporated Milk Association, 307 North Michigan Avenue, Chicago, Illinois.

A chart well printed and mounted, telling the story step by step of the processes required in making evaporated milk.

(d) *Milk*—Dairyman's League Cooperative Association, 11 W. 42nd Street, New York

Milking Time—Circulars and two large posters. Single set, 50 cents—more than one, 40 cents each. Each circular contains a story and project suggestions. Grades 3-6.

(e) Tea

1 *Tea and Coffee Trade Journal*—79 Wall Street, New York

Four color pictures of tea plant, leaves, flowers and may of world—25 cents.

These people have other free educational materials on tea.

2 *Yerba Mate*—International Mate Company, 23 Washington Street, New York.

An excellent example of an attempt to introduce a new beverage by advertising methods. The material is very interesting.

B. Other foods

(a) Cocoanut

1 P. Marshall, 418, S. W. 2nd Avenue, Miami, Florida

A very fine display, showing various steps in the stages of cocoanut, blossoms, immature nuts, mature nuts. A very good exhibit. If one has an exhibit case in which to put it, it will last indefinitely.

Price, $1.00

2 *A Coconut in the Husk*—L. Schepp Company, Schepp Building, New York

Free

(b) Cereals

1 *Breakfast Foods*—Kellogg Company, Battle Creek, Mich.

An exhibit in bottles, showing the raw materials and the finished product. (usually corn flakes)

2 *How Post Toasties, Grape-Nuts, and Postum are Made*—Chart. Postum Cereal Company, Battle Creek, Michigan

3 *Flour* — Washburn-Crosby Flour Company, Minneapolis, Minn.

Sample case of exhibits of wheat and flour.

4 Rice

(1) Louisiana State Department of Agriculture, Baton Rouge, Louisiana.

Agricultural samples—stalk of rice, also booklet telling of methods of production.

(2) Louisiana State Rice Milling Co., Abbeville, Louisiana.

A set of twelve interesting samples (in boxes) of the steps in the milling processes of Blue Rose Rice.

5 *Tapioca*—Minute Tapioca Company, Orange, Massachusetts

School exhibit showing the making of Tapioca.

(c) Fish and Meat

1 *Salmon*—American Can Com-

pany, Home Economics Dept., 230 Park Avenue, New York

A large map showing where salmon is produced. Also a booklet, *The Story of Salmon,* tells the history of the salmon and makes clear how it is caught and canned. Very good.

2 *Food Source Map*—Armour & Company, Union Stock Yards, Chicago, Illinois

Very colorful and interesting. The reverse side contains history of the meat packing industry. Small sizes for students' notebooks may also be obtained.

3 Libby, McNeil and Libby, Chicago, Illinois

Pictures and charts on packing fruits and sea food.

(d) Miscellaneous

1 *Oranges and Lemons* — Sunkist Fruit Corp., San Francisco, California

Two charts in color. No. 1—Importance to man; No. 2—Life of fruit from seed to table.

2 *Spices*—Thompson and Taylor Spice Company, Chicago, Illinois

A case containing samples of many kinds of spices.

3 *Sugar*—United States Sugar Beet Association, Washington, D. C.

An excellent chart showing each process from the beet to the finished product. An illustrated book, also, called *The Silver Wedge,* explaining in detail the processes. Very good.

B. Rocks, Minerals, and Oil

1. *Asbestos* — Johns-Manville, Inc., Michigan Avenue & 18th Street, Chicago, Illinois.

Samples of ore—free

2. *Asphalt*—Barber Asphalt Company, Chicago, Illinois

Exhibit—free.

3. *Cement*—Atlas Cement Company,, 134 South LaSalle Street, Chicago, Illinois

4. *Coal* — Educational Foundation, 1014 Hartman Building, Columbus, Ohio

Exhibit of typical products derived from coal.

5. *Fertilizer*—Swift & Company, Chicago, Illinois

Several sample bottles—free.

6. *Glass*—Illinois Glass Company, Alton, Illinois

Exhibit of raw materials—samples of glass.

7. *Iron & Steel*—Illinois Steel Company, 208 South LaSalle Street, Chicago, Illinois

Exhibit showing iron and steel. Free to schools—express not paid.

8. *Limestone* — Indiana Limestone Quarryman's Association, Bedford, Indiana

Samples of Bedford Limestone. Very good booklet on "Nation's Building Stone."

9. *National Fertilizer Association*—H. R. Smalley, Chief Agronomist, Washington, D. C.

Good charts and pamphlets free.

10. *Petroleum*—Sinclair Oil Company.

A very interesting exhibit showing crude petroleum. Some of the products derived from its distillation—also interesting and useful booklets on petroleum. Express not paid.

11. *Typical Rocks, Minerals & Fossils of Illinois*—Illinois State Geological Survey, Urbana, Illinois

A very good exhibit about 3' by 4'—

well mounted on heavy mounting board. Free to schools on condition they make a display case in which to keep the material. A booklet explaining the exhibit may be obtained also.

II. Booklets and Pamphlets

Some of these materials may be placed in the hands of the pupils. Others are best fitted for the teacher to enable her to become better informed on the subject. Still others are of most value for their excellent illustrations. All of them are worthy of a place in one's geography teaching file and are used repeatedly, especially with classes of Economic Geography and Regional Geography.

A. Food

1 *Bananas*

a. *The Story of the Banana.* b. *Radio Bound for Banana Land,* United Fruit Company, Boston, Massachusetts

The first tells clearly and well everything one needs to know of this most interesting and well organized industry. The second is 3-4 grade level and is well prepared.

2. *Beechnut Products* — Beechnut Packing Co., Canajoharie, New York.

This company will send mimeographed sheets on:

The Story of Beechnut Bacon
The Story of Beechnut Ham
The Story of Beechnut Candies
The Story of Beechnut Peanut Butter
The Story of Chewing Gum

The last pamphlet discusses the production of chicle and the process of its manufacture into chewing gum.

3. Dairy Products

(a) Dairyman's League Co-op Association, 11 West 42nd Street, N. Y.

Butter—Includes a legend, early uses, methods, food value.

Cheese—origin of product, Roquefort, Edam.

(b) Kraft—Phoenix Cheese Corporation, 400 Rush Street, Chicago, Illinois

The House of Kraft—Illustrations of the various processes of cheese making.

The Romance of Cheese—A very interesting cheese bulletin.

4 Citrus Fruits

Story of California Oranges and Lemons—Fruit Growers Exchange of California, Los Angeles, California

A very useful booklet—especially for its story of the development of the Washington Navel orange.

5. Corn—*Hybrid Corn Production* —Illinois Farmers' Institute, Springfield, Illinois

Best Hybrid First from Funk—Funk Bros. Seed Co., Bloomington, Illinois

6 *Peanuts*—Planters Nut and Chocolate Company, Chicago, Illinois

Ask for their educational material on peanuts. The pictures are especially good.

7 *Pineapple*—American Can Company, Boston, Masschusetts

Hawaiian Islands and the Story of Pineapple.

A very well written bulletin—pictures at every step—planting, harvesting, canning, and marketing. They have several bulletins.

8 Soy Beans

(a) A. W. Staley Mfg. Co., Decatur, Illinois

(b) University of Illinois—Agricultural Experiment Station, Urbana, Illinois

1. *Soy bean— A Plant Immigrant makes Good*

2. *Soybean Production in Illinois* (No. 310)

3. *Edible Soybeans* (Bulletin No. 453)

9 Sugar

1. *Story of Louisiana Sugar Cane*—Sugarcane League, New Orleans, Louisiana

Good pictures—all information needed

2. *Behind Your Sugar Bowl*—California and Hawaiian Sugar Refining Corp., San Francisco, California.

Thirty page booklet illustrated.

10. Wheat

From Wheat to Wheat Flour—Wheat Flour Institute, 309 W. Jackson Blvd., Chicago, Illinois

This contains excellent pictures (small ones) of primitive harvesting implements and also of modern harvesting machinery. Pictures of the latter are of good size and very clear.

B. Fibers

1 Cotton

History, Culture, and Uses of Cotton—Louisiana State Dept. of Agriculture, Baton Rouge, Louisiana

They will also send samples of cotton bolls.

2 Jute

Jute—An Account of its Growth and Manufacture—Ludlow Manufacturing Company, Ludlow, Massachusetts

Price $1.00

This book is well worth the price. The text is clear and lucid. The pictures show each step in its manufacture.

3 Ramie

Ramie—Carter and Horton—University Studies No. 26, Louisiana State University Press, Baton Rogue, Louisiana (1936)

This booklet costs $1.00 but it answers all the questions on this little known fiber.

4 Rayon

Story of Rayon—E. I. Dupont and Company, Empire State Building, New York

5 Silk

(1) *Silk—Its Origin, Culture, and Manufacture* — Belding, Heminway, Corticelli, 119 West 40th St., New York

(2) *The Story of Silk*—Cheney Brothers, New York

Samples of silk cocoons and thread.

(3) *The Romantic Story of Silk*—The Silk Association of America, 468 4th Avenue, New York

Twenty page illustrated booklet, published especially for use in the schools.

6 Sisal

The Story of Twine—International Harvester Company, Harvester Bldg., Chicago, Illinois

The very best material on sisal is an article by Alice Foster in the *Journal of Geography*, Volume 29, pp. 16-25.

C. MISCELLANEOUS

1 Cork

Cork and the American Cork Industry by Arthur Faubel—Cork Institute of America, 25 West 43rd St. New York

A very complete book. Excellent pictures with much interesting detail—free to schools. The same company has a cork exhibit, which may be obtained for $2.00.

2 Leather

The Story of Leather—Ohio Leather Co., Girard, Ohio

Eighty page booklet, beautifully illustrated. It describes a trip through a tannery.

3 Nitrates

Vital Impurities—Chilean Natural Nitrate

Chilean Nitrate Educational Bureau, New York

A very interesting booklet comparing natural with synthetic nitrate.

4. Paper

Trees to Tribunes—Chicago Tribune

Chicago, Illinois

5 Petroleum (especially in Illinois)

State Geological Survey—Urbana, Illinois

Much excellent material may be had for the asking but, since it is published as new developments and progress occur, it must be asked for frequently.

6 Steel

(1) *Steel Serves the Farmer*—American Iron and Steel Institute

Excellent pictures of farm machinery.

(2) *The Picture Story of Steel*—Same Company as in No. 1

7 Tin

The Story of the Tin Can—National Canners' Association, Washington, D. C.

A very good booklet.

8 Tung Oil

Tung Grove Development Company—1057 Main St., Ocala, Florida

High pressure advertising, but very interesting.

The Tung Oil Tree—Bulletin No. 280, Agricultural Experiment Station, Gainesville, Florida

9 The Pan-American Union publishes a set of booklets on products of the Americas. These are authentic, informative, and very useful. They may be put into the hands of pupils in the Junior High School but they serve their purpose best in the grades for teacher information. They may be purchased as a set for $1.00, or each title may be purchased separately for five cents.

III. Recreational Areas

Much needed information about a region, excellent pictures, and a feeling of familiarity with an area can be gained from booklets advertising "playground" areas. Material from these publications can be used in the geography club in reports or panel discussions of "Where Should I Spend My Vacation?" *The National Geographic Magazine* carries many advertisements with names and addresses of such free material. This list which follows is very incomplete.

A. *National Parks*

U. S. Department of Interior, National Park Service, Washington, D. C.

These bulletins are available for each National Park. They are free, but will not be sent all at one time. One is more successful in securing them if specific parks are asked for, such as:

Crater Lake National Park, Oregon

Yosemite National Park, California

Wind Cave National Park, South Dakota

Recreational Areas of the United States under Federal and State Government, including Alaska and Hawaii.

B. *Illinois Parks*

(1) *Illinois State Parks and Memorials*—State of Illinois, Dept. of Public Works and Buildings, Springfield, Ill.

(2) 10 *Tours of Illinois*—Illinois Development Council, Springfield, Ill.

C. *State Bulletins*

(1) *Maine—Land of Remembered Activities*

Maine Development Commission, Augusta, Maine

(2) *North Carolina*

North Carolina Dept, of Conservation and Development, Raleigh, North Carolina

(3) *Tennessee*

Tennessee Department of Conservation, Nashville, Tennessee

(4) *Washington State*

Washington State Progress Commission, Olympia, Washington

These are only a few samples of the materials that may be obtained from the state departments.

IV. Railroad companies, Airways, and Busses

A. *Railroad Companies*

Many beautiful posters and booklets can be obtained from railroad companies, air, and bus lines. A few of their listings follow:

(1) Burlington Route, 547 W. Jackson Blvd., Chicago, Illinois

(2) Great Northern Railway, 212 S. Clark Street, Chicago, Illinois

a. *Western Trips for Eastern People*

b. *Grand Coulee Dam*

c. *The Empire Builder*

(3) Union Pacific System, 6 S. LaSalle Street, Chicago, Illinois

A Map of United States. Historic beginnings of the line and description of present scenic western route.

(4) Pullman Company, 79 E. Adams Street, Chicago, Illinois

a. *Pullman Facts*

b. *Pullman Progress*

B. *Airways*

Pan-American Airways, Inc., Chrysler Building, New York

a. *Wings Over America*

b. *Clipper Cruising over the West Indies*

C. *Busses*

(1) Greyhound Lines, 920 Superior Avenue, Cleveland, Ohio

This Amazing America

(2) Fisher Body Craftsman's Guild, General Motors Corporation, Detroit, Michigan

An Outline of Transportation from 1400 B.C.

V. Soil Conservation

Many valuable charts and bulletins are published by state and national conservation departments. All are valuable and helpful. The list of material may be obtained from the U. S. Department of Agriculture, Washington, D. C.

Many magazines that are not strictly geographic contain much valuable geography. The *Country Gentleman* is an excellent magazine to assist a teacher in new developments in agricultural geography. The advertisements in that magazine include mnay addresses where free material may be obtained. *The Saturday Evening Post, The Reader's Digest, The Prairie Farmer, Good Housekeeping,* and the *American* occasionally contain excellent articles that are useful to the geography teacher.

Films, too, are available for schools from many sources, if the borrower pays the transportation charges. The American Museum of Natural History, Dept. of Education, Film Division, 77th Street and Central Park West,

New York City, has a long list of films. The names and a short description of each may be obtained by writing to the director of the museum. The University of Illinois also has a film service. A school that pays a flat rate for a year may secure a number of films on many subjects chosen from their long list of films. Detailed information about this may be secured by writing to Visual Aid Service, University of Illinois, Champaign, Illinois.

Maps in the Elementary and High Schools

H. O. LATHROP*

EDUCATION attempts to bring to the child some essentials of the accumulated experience, knowledge, arts, and skills of the race in such a way that his powers of thinking will be stimulated and his social attitudes in relation to others will be developed. Any method or device that will aid the teacher in realizing these aims is to be commended. The teacher depends larely upon the writen and spoken word to attain these objectives. Words are symbols that stand for ideas, and the connotation of words is determined by the experiences of the individual. For this reason different ideas are conveyed to different individuals by the same word. This is the basic cause for so much difference in understanding among people who hear or read the same thing.

Although man will probably continue to depend upon words, they should be supplemented in so far as possible by first-hand experiences, pictures, graphs, and maps. In many cases, these latter devices convey ideas more efficiently than the printed or spoken word. Where this is true, they should receive primary emphasis and the printed page be used to supplement maps and pictures.

Aims and Values of Map Study

1. Maps are efficient, and save time in conveying information, or suggesting ideas. They are shorthand records of knowledge. The amount of information expressed or suggested upon a map is almost beyond comprehension. One may illustrate by taking only one item, the location of places and their relation to one another. In the first place, the map shows the exact location of thousands of places and, through the map, their position on the earth's surface. In the second place, maps show the relation of every place to every other place. If just these relationships alone be considered, it would take volumes to describe them in an understandable manner, and it would be impossible for any written description to make them as clear as the map does.

2. Maps help to make geography

* Head of Department of Geography and Geology.

real. The average pupil will never see most of the earth about which he reads. Maps help to give realism to the regions studied. Too much of geography consists in memorizing meaningless words. The pupil must be encouraged to build up map pictures of what he studies. This means constant reference to the map and the development of the map habit. Map pictures, however, are not enough. Maps are a means to an end. From the map picture, the child must be taught to think through to a real earth of water and land, mountains and plains, and one inhabited by real people like himself.

3. Maps show relationships. This is one of the implied or suggestive values of maps and may not be appreciated unless the teacher constantly uses them in that way. Maps show that cities of considerable size are located near the ends of most of the Great Lakes; that the dense populations of Great Britain are in the coal fields; that the textile factories of the South are along the Fall Line; that the North Atlantic is the great ocean of commerce. The map thus stimulates and provokes problems and aids in their solution.

4. The map is valuable as a tool. One is likely to think of the map as the property of the geography teacher. It is indispensable to him, but the teacher of history or literature finds it almost as valuable. It makes the understanding of current events easier. The traveler finds it a necessity. The ordinary individual in the daily walks of life finds constant reference to maps valuable and time-saving.